Algebra 2 CC Q1 Review for Quarter Test

SHOW ALL WORK ON SEPARATE PAPER! Be sure to review your old notes and tests as well.

1) Simplify: $\frac{\sqrt{75}}{\sqrt{3}}$ $= \sqrt{25} = 5$

A) 25 B) 5 C) $\frac{5\sqrt{3}}{3}$ D) $5\sqrt{3}$

2) Simplify: $2\sqrt{3}(3\sqrt{6} - 3\sqrt{3})$ $6\sqrt{18} - 6\sqrt{9} \rightarrow 18\sqrt{2} - 18$

A) 18 B) $12\sqrt{3} - 18$ C) $18\sqrt{2} - 18$ D) $3\sqrt{6} - 6\sqrt{3}$

3) What is the sum of $\frac{5}{3}x^2 - \frac{8}{5}x + \frac{7}{8}$ and $-\frac{3}{5}x^2 - \frac{1}{2}x + \frac{1}{4}$? add $\frac{5}{3} + \frac{-3}{5} = \frac{16}{15}$

A) $x^2 - \frac{9}{7}x + \frac{2}{3}$ C) $\frac{2}{15}x^2 - \frac{9}{10}x + 1$

B) $\frac{8}{15}x^2 - \frac{9}{10}x + 2$ D) $\frac{16}{15}x^2 - \frac{21}{10}x + \frac{9}{8}$

4) What is the product of $(2 + a)$ and $(3 - b)$? $6 - 2b + 3a - ab$

A) $6 - ab$

B) $6 - 2b + 3a - ab$

C) $6 + ab - b^2$

D) $5 + ab + 3a - 2b$

5) If $(\sqrt{18} + \sqrt{2})$ is divided by $\sqrt{2}$, the result is

A) 4 $\frac{\sqrt{18}}{\sqrt{2}} + \frac{\sqrt{2}}{\sqrt{2}} \rightarrow \sqrt{9} + \sqrt{1} = 3 + 1 = 4$ B) 16 C) $\sqrt{10}$ D) 3

6) Which of the following correctly shows the factoring of $x^3 + 27$?

A) $(x + 3)(x^2 + 3x - 9)$

B) $(x + 3)(x^2 - 3x + 9)$

C) $(x + 3)(x + 3)(x + 3)$

D) $(x + 3)(x - 3)(x - 3)$

$\sqrt[3]{x^3} = x$ $\sqrt[3]{27} = 3$ $(x+3)(x^2 - x(3) + 3^2)$ SOAP

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7) What is the quotient when $x^3 - 2x^2 - 9$ is divided by $x - 3$?

A) $x^2 - x - 6$ B) $x^2 + x - 6$ C) $x^2 - 5x + 6$ D) $x^2 + x + 3$

8) Simplify: $\left(\frac{x^2 - 4}{10x}\right)\left(\frac{5x^2}{x^2 + 2x}\right)$

A) $x - 1$ B) $\frac{x - 2}{2x}$ C) $\frac{x - 2}{2}$ D) $\frac{x + 2}{2x}$

9) For which value(s) of x is the function $f(x) = \frac{x^2 - 9}{x - 7}$ undefined? $x - 7 \neq 0$ $x \neq 7$

A) 3, only B) 9 C) 3 and -3 D) 7

10) Simplify: $(7 - x\sqrt{x})^2$

A) $49 - 14x\sqrt{x} + x^3$ C) $49 - 14x\sqrt{x} + x^2$

B) $9 - 7x\sqrt{x} + x^3$ D) $49 - x^3$

11) Simplify: $6\sqrt{54} - 3\sqrt{24} - 8\sqrt{96}$

A) $-8\sqrt{6}$ C) $-20\sqrt{6}$

B) $10\sqrt{6}$ D) $3\sqrt{30} - 8\sqrt{6}$

12) Simplify: $\sqrt{72}$ $\sqrt{36}\sqrt{2}$ $6\sqrt{2}$

13) Combine and simplify: $6\sqrt{20} - 2\sqrt{80}$ $6\sqrt{4}\sqrt{5}$ $6 \cdot 2\sqrt{5}$ $2\sqrt{16}\sqrt{5}$ $2 \cdot 8\sqrt{5}$ $12\sqrt{5} - 16\sqrt{5}$ $-4\sqrt{5}$

14) Combine and simplify: $2\sqrt{18x^2} + 3x\sqrt{2}$ $2\sqrt{9x^2}\sqrt{2}$ $2 \cdot 3x\sqrt{2} + 3x\sqrt{2}$ $6x\sqrt{2} + 3x\sqrt{2}$ $9x\sqrt{2}$

15) Simplify: $(6x^2 + 11x - 10) \div (2x + 5)$ $\frac{6x^2 + 11x - 10}{2x + 5} = \frac{(2x+5)(3x-2)}{(2x+5)} = 3x - 2$

$ac = -60$ $-4 \mid 15$ $6x^2 + 15x - 4x - 10$ $3x(2x+5) - 2(2x+5)$ $(3x-2)(2x+5)$

7) $(x^3 - 2x^2 + 0x - 9) \div (x - 3) = x^2 + x + 3$ $-(x^3 - 3x^2)$ $1x^2 + 0x$ $-(x^2 - 3x)$ $+3x - 9$ $-(3x - 9)$ 0

8) $\frac{x^2 - 4}{10x} \cdot \frac{5x^2}{x^2 + 2x} = \frac{(x+2)(x-2)}{10x} \cdot \frac{5x}{x(x+2)} = \frac{x-2}{2}$

11) $6\sqrt{54} - 3\sqrt{24} - 8\sqrt{96}$ $6\sqrt{9}\sqrt{6}$ $6 \cdot 3\sqrt{6}$ $18\sqrt{6}$ $3\sqrt{4}\sqrt{6}$ $3 \cdot 2\sqrt{6}$ $6\sqrt{6}$ $8\sqrt{16}\sqrt{6}$ $8 \cdot 4\sqrt{6}$ $32\sqrt{6}$ $(18 - 6 - 32)\sqrt{6}$ $-20\sqrt{6}$

10) $(7 - x\sqrt{x})(7 - x\sqrt{x})$ $49 - 7x\sqrt{x} - 7x\sqrt{x} + x^2\sqrt{x^2}$ $49 - 14x\sqrt{x} + x^2 \cdot x$ $49 - 14x\sqrt{x} + x^3$ A

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16) Simplify: $\frac{4}{\sqrt{8}} = \frac{4}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{4\sqrt{8}}{8} = \frac{\sqrt{8}}{2} = \frac{\sqrt{2}\sqrt{4}}{2} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

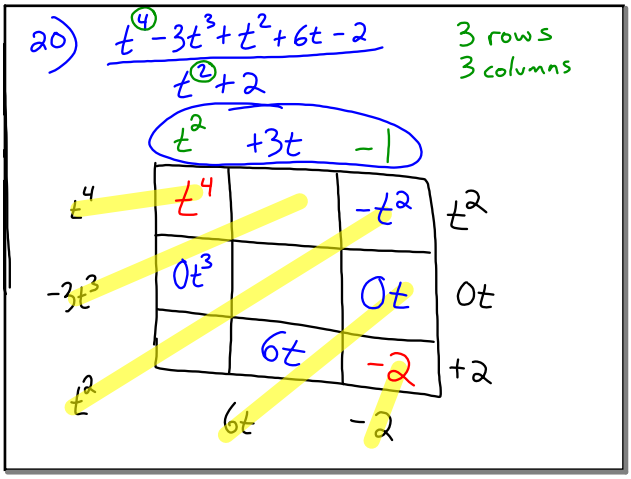
17) Write an expression to represent $ax - ay - bx + by$ when factored completely. $a(x-y) - b(x-y)$ $(x-y)(a-b)$

18) Write an expression to represent $4x^2 - 9$ when factored completely. $(2x + 3)(2x - 3)$

19) Simplify: $\sqrt[3]{54}$ $\sqrt[3]{27}\sqrt[3]{2}$ $3\sqrt[3]{2}$ 1, 8, 27, 64, 125

20) What is the quotient when $(t^4 - 3t^3 + t^2 + 6t - 2)$ is divided by $(t^2 + 2)$?

21) Simplify: $\frac{-5}{3 - a} \div \frac{10}{a - 3}$ $a \neq 3$ $\frac{-1}{5} \cdot \frac{a-3}{10} = \frac{1}{2}$


20)
$\frac{t^4 - 3t^3 + t^2 + 6t - 2}{t^2 + 2}$
3 rows
3 columns
$t^2 + 3t - 1$
t^4
$-3t^3$
t^2
t^4
$-t^2$
t^2
$0t^3$
$0t$
$0t$
$6t$
-2
$+2$
$6t$
-2

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